

DECENTRALIZATION AND CO-MANAGEMENT OF PROTECTED AREAS IN INDONESIA

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I. Introduction

With the changing development paradigm in the recent past, the role of communities and local government have been re-emphasized and the roles of central government have steadily decreased, which changes have been attributed to decentralization policies. Various options for natural resources management are being debated, including cooperative management (hereafter co-management) among key stakeholders, viz, central government, local government, and local communities. There are several reasons for adopting co-management. These are: the failure of market approaches in resources allocation; the failure of government monopoly, or top-down decisionmaking in resources management; and also the failure of community-based resources management (bottom-up decisionmaking) due to lack of coordination with the state and the market.

Protected areas management in developing countries has faced several issues, including the recent decentralization trend that presents a new challenge on how to make decentralization work for conservation processes such as protected areas management (Lutz and Caldecott 1996; Wyckoff-Baird et al., 2000; Anderson and Gibson 2004). In the past local and regional governments have viewed protected areas within their districts as obstacles to local government revenue generation. Thus they did not want to participate in conservation efforts because they were costly and they had no incentive to get involved in them (see Griffiths et al 2002). In addition, these local and regional governments often do not share national and international concerns for biodiversity conservation (McCarthy, 2000, citing Kaimowitz et al. 1998). A clear challenge is to make local government a partner in

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protected areas management.

Along with the paradigm shift in the relationship between protected areas and local people, issues concerning the livelihood of local people have emerged, most substantially in conflicts on issues of partnership and collaboration and the management of context specific partnerships affecting all stakeholders (Rao 2001; Elliott, 1996). Identifying appropriate institutions at local levels is another challenge. As da Silva (2004) argues, central to this process is the recognition and legitimization of traditional or informal local-level management systems.

Recent decentralization in Indonesia is a case in point. Studies of protected areas management in Indonesia after the implementation of government decentralization policies have produced very controversial results. It is widely reported that decentralization triggers local government efforts to exploit the remaining forest resources, regardless of their status, with the object of earning a short term revenues either through timber cutting or by converting forest areas into agricultural plantations, or by converting protected forest into production forest in order to increase regional income from logging permits (Aden, 2001; Sudana 2004; Dewi, Belcher, and Puntodewo, 2005; FWI/GFW, 2002; McCarthy, 2004; Obidzinski, 2004; CIFOR, 2002; McCarthy 2001a; McCarthy 2001b; Obidzinski and Barr, 2003; Obidzinski, 2004; Rhee, 2000; Casson and Obidzinski 2002). Illegal logging in protected areas, involving many stakeholders including local people, logging companies, military personal and corrupt forestry officials, is found to be increasing (McCarty, 2002; Barber and Talbot 2003; Laurance, 2004; Ravenel, 2004; Hiller *et al.* 2004).

In Indonesia the concept of co-management involving central government, local government, the commercial private sector, local communities, and civil societies (The World Bank 1999), in combination with the currently ongoing decentralization reform, has created a better environment for implementing this model as a means of effectively managing community resources. It remains to be seen, however, to what extent decentralization will trigger the creation of co-management. Therefore, several issues arise, such as why the decentralization and policy reform does not automatically produce co-management, and what should be done to expand these reforms on a wide scale to include protected areas co-management. This paper seeks to explore the important issues related to protected area co-management and the provision of structures of incentives for Indonesia. Specifically, in this paper we examine whether locally available sources of finance and incentives for providing financing for protected areas as matters of local

interest have been sufficiently developed. Debate on the need to involve local communities in protected areas management for the conservation of the remaining forest has been energized since these local communities are the most affected stakeholders and so have a keen interest in the enforcement of the regulation (Gibson et al. 2005).

Scholars have defined co-management as “the sharing of power and responsibility between the government and local resource users” (Carlson and Berkes 2005, citing Berkes et al. 1991: 12). Co-management can succeed only when the incentives for local government and local communities to participate in protected areas management are spelled out clearly. In addition, its success depends on the extent to which local people depend on forest resources and how far appropriate local institutions are partners with local communities

We examined these issues of co-management through the study of Barisan I Nature Reserve, a protected area in West Sumatra Province, Indonesia. The study was conducted between August 2004 and May 2005, three years after the implementation of government decentralization policy in the country. Timber felling has been rampant in this protected area (PA). The PA straddles four autonomous districts. Hence, the response of each district government toward the protection of this reserve under current decentralization is examined and the effects of the responses are compared. Before we present discussion on our research site we review the current decentralization and forest management policies in Indonesia to determine whether the current administrative system in the country is suitable for its propose, and we develop a co-management model.

II. Policy Changes and Prospect for Protected Areas Co-Management in Indonesia

Along with the global trend to decentralization, the current regional autonomy policy in Indonesia opens a possibility for co-management in protected areas involving central government, local government, local communities and civil society (see for example FWI/GFW 2002; Haeruman 2001; Clifton 2003). Optimism about this has been reinforced by radical changes in forest policy, the reorganization of government administration through decentralization, and biodiversity conservation policy.

Forest governance and management in Indonesia, which is governed by Law No.

41/1999, explicitly includes provisions for decentralization and local people empowerment. In addition, the drafting of the law has been a participatory process through the involvement of civil society groups (Lindayanti 2002). Thus it lays the foundation for a participatory approach to forest management in all areas including protected areas.

Article 6.1 of the law outlines three main forest functions, namely, conservation, protection and production. Production forest has the main function of producing forest products; protection forest on the other hand has the main function of protecting life-supporting systems for hydrology, preventing floods, controlling erosion, preventing sea water intrusion and maintaining soil fertility; and conservation forests enclose an area with specific characteristics having the main function of preserving plant and animal diversity and its ecosystem. Protection forest and conservation forest fall under the category of protected area. Further, conservation forest as elaborated in Article 7 is divided into: (a) Nature reserve forest, which means a forest with specific characteristics, having the main function of preserving plant and animal diversity and its ecosystem, and also serving as the place for life-supporting systems; and (b) Nature preservation forest area, which means a forest with specific characteristics, having the main function of protecting life-supporting systems, preserving species diversity of plants and animals, and enabling the sustainable use of biological resources and its ecosystem. Our study sites belong to nature reserve forest.

Central government, however, still holds a strong control over the forest under Chapter I of the Law, especially in Article 4 which gives central government the power to: (i) regulate and organize all aspects of forest, forest areas and forest products; (ii) determine the status of an area as a forest area or a non-forest area; and (iii) regulate and determine legal relations between man and forest, and regulate legal actions concerning forestry.

The role of local government in managing forest has been specified. In Chapter VIII of the Law on the delegation of authorities, Article 66 specifically has stipulated that in implementing forest administration, central government shall delegate part of its powers to local government. The roles of local government in this respect shall, however, be regulated by a central government regulation. In the implementation of this article, Government has issued three government regulations (hereafter GRs): GR No. 34/2002 on forest management and forest management planning, forest use and utilization of forest area; GR No. 44/2004 on forest planning; and GR No. 45/2004 on forest protection. These regulations

stipulate the role of local government in many aspects of forest management. Basically there is a delegation of authority to local government to manage forest areas within their jurisdiction by following guidelines provided by central government.

The current forestry law also recognizes the role of local people in forest and protected area management, thus providing room for local communities to participate. Chapter IX of the law is devoted to community customary law. Similarly, Article 69 provides (a) that communities shall be obliged to participate in maintaining and preventing forest areas from disturbance and damage, and (b) that in implementing forest rehabilitation, communities can also request assistance, guidance and support from non-governmental organisations, other parties or government. Community roles are further elaborated in Article 70 emphasizing their importance in the co-management of forestry resources.

The similar type of arrangement for the sharing of rights and responsibility in protected area management among central government, local government and local community can be found in protected areas policy stipulated in Law No. 5/1990 regarding biodiversity and its ecosystem protection.

In the context of protected areas management, it is worth mentioning that the decentralization policy enacted in 1999 and revised in 2004 has made provision for central government to transfer to autonomous local governments authority to manage local resources including protected areas. These have become an 'optional obligation' for local government as not all regions have forest and protected areas, and they can also be regarded as a compulsory obligation to control the environment.

However, as the paper will show later, decentralization does not automatically bring about co-management models. With regard to this, several issues need to be addressed, including the identification of local partners and the requirement of conditions conducive to the environment. We have examined these issues in a protected area of West Sumatra Province, where different levels of decentralization and co-management models are being implemented.

III. Study Area

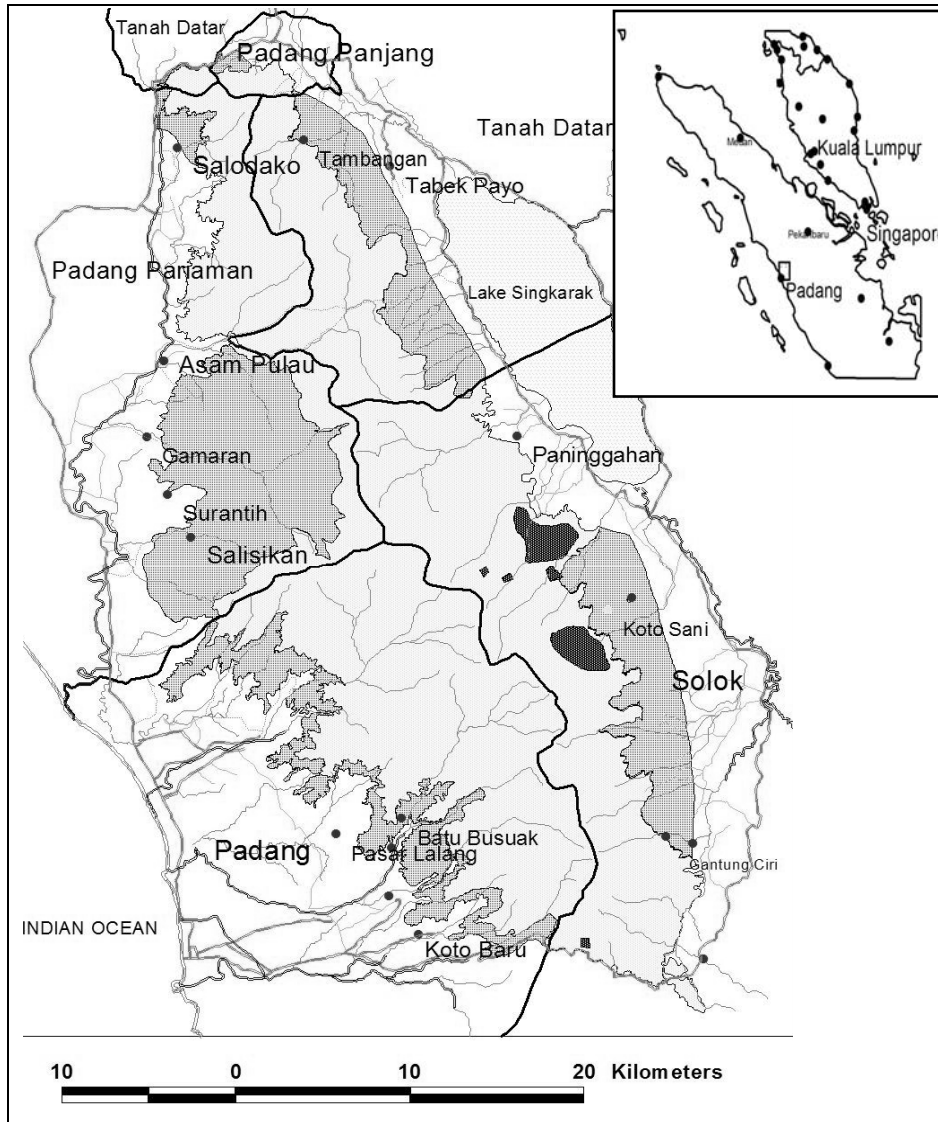
Barisan I Nature Reserve in West Sumatra Province covers an area of 74,000

hectares (Figure 1). According to International Union for Conservation of Nature (IUCN) protected areas classification, this reserve area belongs to category VI. Areas in this category should contain predominantly unmodified natural systems managed to ensure long term protection and maintenance of biological diversity while providing at the same time a sustainable flow of natural products and services to meet community needs. IUCN has outlined the objectives of management protected area category VI as: (a) to protect and maintain the biological diversity and other natural values of the area in the long term; (b) to promote sound management practices for sustainable production purposes; (c) to protect the natural resource base from being alienated for other land-use purposes that would be detrimental to the area's biological diversity; and (d) to contribute to regional and national development (IUCN 1994). The Government of Indonesia since 1982, however, has considered this area as a Nature Reserve where no harvesting of forest products is allowed. It is intended to be the research equivalent of ICUN category I, a strict nature reserve. Since 2002, the Department of Forestry has even proposed that Barisan I Nature Reserve be classed as a National Park considering the importance of biodiversity and ecological functions in the area.

The reserve straddles four autonomous districts, namely, Padang City (the capital of West Sumatra Province), and Padang Pariaman, Tanah Datar and Solok Districts. These autonomous districts have implemented various levels of decentralization. Hence, the response of each district government to the protection of Barisan I Nature Reserve in their respective jurisdictions under current decentralization can be examined and compared.

Barisan I Nature Reserve has the environmental function of maintaining water condition in the catchments of several rivers that supply water to Singkarak Lake where a 154 MG Hydro Electric Power Plant operates. These rivers also supply water to a number of small scale irrigation systems surrounding the forest reserve. Thus it has an important role in hydrological regulation. This is a long established protected area which dates back to the Dutch colonial time in the early 20th century. Thus local understanding of its existence can be expected to be high.

Figure 1. Barisan I Nature Reserve, West Sumatra, Indonesia



Barisan I Nature Reserve represents a continuous forest which under the recent Forestry Law has a complex system of forest management. Its inner part is conservation forest which by law is the responsibility of central government but is surrounded by protection forest which is under authority of district government. Further, communal forests are either under the management authority of the community (*nagari, suku*), or under the extended family authority. We examine the important role played by each group of stakeholders in protected areas management. The issue of management get further complicated since this reserve area is surrounded by 23 *nagaris* (traditional villages) which have traditional claims of land rights inside protected areas and whose roles in forest protection have been enhanced under the current government decentralization policy in West Sumatra Province.

IV. Site and household selection criteria

Decentralization in West Sumatra province has been implemented by the *return to nagari* policy. However not all districts have adopted it. We have divided the study area into four zones according to model and degree of decentralization . In cities especially the policy is not implemented, and city government still follows the national administration model called *Kelurahan* as the lowest administrative unit. For our study purpose, we call this district and its type of decentralization category 1 (D-I). In other districts, there are varying degrees of decentralization implemented, with the revitalization of *nagari* administration system and co-management. There are districts with revitalized *nagari* but without power decentralized to *nagari* government (D-II), districts with revitalization and decentralized power but not performing co-management (D-III), and districts with revitalization and re-decentralization and also performing co-management (D-IV).

Based on the above model and level of decentralization, and taking a number of prevalent forest related activities (such as; farming, fuel wood collection, non timber forest products collection, hunting and trapping, and persistent timber felling) in each *nagari*, we selected eleven out of 23 *nagaris* surrounding reserves for detailed study including household surveys. Three villages (*kelurahan*) belonged to D-I in Padang, another 3 *nagaris* belonged to D-II in Padang Pariaman District, 2 *nagaris* belonged to D-III in Tanah Datar District, and 3 *nagaris* belonged to the D-IV category in Solok District. From each selected *nagari*, *lorongs* (sub-villages) having a border with Barisan I Nature Reserve were purposively selected as study sites the total number of these selected sub-villages

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being 17. In each selected sub-village, approximately ten percent of household were randomly selected for interview, giving a total of 299 households. Basic information about these households is presented in Table 1.

Table 1: Some basic information about respondents and their households

Level of decentralization and co-management	Number of sample	Respondents' level of education			# respondents involved in farming	Av. household size	Average irrigated land holding (ha)	Average upland holding (ha)
		Illiterate	Elementary School	High School +				
D-I (no revitalization)	70 (100.0)	8 (11.4)	33 (47.1)	29 41.4	30 (42.9)	6	.26	.59
D-II (revitalization but no decentralization)	75 (100.0)	2 (2.7)	57 (76.0)	16 (21.3)	45 (60.0)	5	.41	1.11
D-III (revitalization, decentralization, but no collaboration)	74 (100.0)	5 (6.8)	37 (50.0)	32 (43.2)	46 (62.2)	5	.64	.86
D-IV (revitalization, decentralization, and collaboration)	80 (100.0)	6 (7.5)	52 (65.0)	22 (27.5)	58 (72.5)	6	.45	.88
Total	299 (100.0)	21 (7.0)	179 (59.9)	99 (33.1)	179 (59.9)			

Note: Figures in parenthesis indicate percentages

V. Findings

Multilevel Decentralization

As mentioned earlier, Law No. 22, enacted by the Government of Indonesia in 1999, served as a basis for regional autonomy. This Law was intended to reduce the control of the centralized and authoritarian government through decentralization during the New Order Regime and to acknowledge the social, political and cultural diversity in the country. In West Sumatra, the process of decentralization has been of a particularly dynamic and interesting character, where along with the general decentralization of central political authority and economic resources to the districts, a fundamental restructuring of local village government has also been initiated (F and K von Benda-Beckmann 2001). The policy of regional autonomy has been taken up with the aim ‘to return to the *nagari*’. Some district governments, in turn, shifted some of their authority to *nagari* government. There is a great expectation that by implementing multilevel decentralization, government at all levels will be more responsive towards local needs and hence participation will increase (ibid. 2001).

However, local responses to decentralization vary widely both across spatial and infrastructural dimensions as well as at macro, meso, and micro level. District heads and parliamentarians have (re)acted with different speeds and degrees of enthusiasm to these developments. Earlier research conducted in West Sumatra reported that in two out of 14 districts in the province, namely, Limapuluh Kota and Solok, district heads had taken a number of initiatives to implement the new structure quickly by revising their district administrative structure and pushing forward the return to the *nagari* system. They promulgated their own district regulations, and Solok district implemented local administration changes integrating the *nagari* system as soon as the provincial regulation became effective in January 2001 (F and K von Benda-Beckman 2001). With regard to protected areas management, Solok district has also moved much ahead of other districts by taking several initiatives which we discuss in detail in the following section.

District government initiative

As mentioned earlier, varying degrees of decentralization have affected local initiatives differently with respect to protected areas co-management. In D-I,

where revitalization of *nagari* has not been initiated, nothing has changed since the implementation of government decentralization. In D-II, revitalization of local administration has not been followed up by decentralizing power, while in D-III revitalization of village administration has been followed by decentralization of power to village administration, but there has been no initiative for co-management. It is only in D-IV that *nagari* revitalization has been followed by decentralization and formation of co-management of protected areas by district government and *nagari* government.

Solok district (D-IV) encloses several protected areas, and the stakeholders have made a systematic effort to maintain these protected areas. The District Forestry Service issued a decree on the establishment of Community Forest Guarding Units (CFGUs) in 2003. Along Barisan I NR, the district government set up CFGUs in four *nagaris* consisting of the head of *nagari*, chief of the youth wing, chief of the adat council, and the respective sub-village heads who are assigned and recruited to guard the forest. Their tasks are to patrol the forest and to detect any threat such as forest fire, illegal logging, fauna hunting, and illegal collection of forest products. The CFGUs report to the district government each case of default found in their respective villages. This has dramatically reduced illegal timber felling. The district government follows up on CFGU complaints by taking necessary action, coordinating forest patrols and helping to prevent forest fires by coordinating with the central government forestry unit in the district.

CFGUs have worked quite well in each *nagari* within Solok district. In *nagari* Koto Sani, the unit was able to stop tree cutting for canoe making in the protected area. In *nagari* Batang Barus, the CFGU has socialized its community members regarding the importance of forest, gotten the users involved in forest patrols, and sent periodic reports to district forestry services. However, while some *nagaris* have taken initiatives to safeguard the protected areas in their vicinities, others have not been so successful and hence the forest conditions have varied across the *nagaris*. We therefore examine in the following sections how revitalized *nagari* administration has responded to the decentralization opportunity through an examination of the implementation of policy documents on protected areas management, and then by triangulating field observation, interviews with key informants, and a household survey.

Nagari initiative

The CFGUs from the villages surrounding Singakarak Lake (D-III) and from the rural areas of Solok (D-IV) took additional strategic steps to protect forest. These varied across *nagaris*, from creating forest protection regulations to activities that stopped illegal logging and forest clearing. This is quite an interesting development since the *nagari*s had previously lost control over forest resources after the enactment of Desa administrative system in 1983.

For example, in *nagari* Jawi-Jawi, located in Solok area of D-IV, *nagari* conservation of forest is achieved by not allowing any further logging and forest clearance for agriculture. It is provided in the regulation that people who are currently farming in the protected areas are allowed to continue but no more expansion is allowed. Even though this regulation still needs district government approval, at local level it has taken effect: no more forest clearance has been carried out and farmers follow the regulation.

In *nagari* Guguak Malalo which is situated in rural areas surrounding Singkarak Lake of D-III, forest regulation is designed for ecological protection, since the villagers want to protect the forest in view of the threat of land slides threat in the periphery of their villages. Through enactment of this regulation (a) no animal killing and hunting is allowed, (b) no trees are allowed to be cut, and (c) no shifting cultivation is allowed.

Padang Laweh Malalo village of D-III is quite distinct as far as conservation forest is concerned. The *nagari* administration negotiated with a forestry department agency at regional level to readjust the protected area boundary by removing some water sources from the state conservation forest and putting them under *nagari* control. With this area under community control, the villagers feel that the forest where water sources are found will be better protected as compared to those under state forest regulation.

There have been attempts by local people to stop illegal logging in *nagari* Talang of Solok district (D-IV), where the youth have reported cases of illegal logging carried out by ex-police officers and other officials working for the *nagari* government. In *nagari* Saningbakar along Singkarak lake (D-IV), it was reported that, in order to rehabilitate critical land in forest areas, migrants from this *nagari* mobilized and invested as much as USD 153,000 for rehabilitation of critical land.

Varying results of multilevel decentralization and co-management on protected areas

Our household surveys show that decentralization has had a variable impact on forest management within protected areas. In general, there are similar forest related activities across districts. However in rural areas of Solok district (D-IV) nearly half of the households reported some positive impact with regard to forest management after revitalization of the *nagari* administration system (Table 2). In contrast, in D-1, D-II, and D-III households revealed a lower impact of *nagari* revitalization in managing forest, meaning that there was very little co-management. To those who mentioned a change in forest protection since *nagari* revitalization, we asked further questions, such as what activities *nagaris* have been taking with regard to protected area. Two main responses were guarding the forest and regulating forest use (Table 3). This implies that the communities are already participating in several important aspects of forest conservation, engaging in fact in co-management. These responses are in line with conservation initiatives taken by *nagari*. For example *Nagari Koto Sani* in Solok district has implemented *nagari* regulations regarding forest, i.e., (a) villagers are allowed to cut timber for their own use, (b) if timber is for sale within the *nagari*, a tax is levied by the *Nagari* Council at USD 5 per m³, and (c) no timber transportation outside the *nagar* is allowed.

In consequence of local initiative, there is a significant change in the number of households involved in illegal logging in D-IV (Table 2). The varying degrees of decentralization and co-management also have effects on local understanding of protected area management authority. As shown in Table 4, in D-IV local people perceived *nagari* as having authority over the management of protected areas while in the rest of district local people perceived district and provincial government as having authority over the protected areas and not *nagari*. This implies no decentralization.

Table 2: Number of households involved in forest related activities

Level of decentralization and co-management	Total household sample	Number of household						
		Involved in forest farming	Collecting firewood	Hunting and trapping animal/birds	Collecting NTFP	Possessing Chain Saw	Currently Involved In Timber	Previously involved in Timber Felling
D-I (no revitalization)	70 (100.00)	34 (48.6)	40 (57.1)	6 (8.6)	8 (11.4)	0 (.0)	15 (21.4)	17 (24.3)
D-II (revitalization but no decentralization)	75 (100.0)	45 (60.0)	58 (77.3)	17 (22.7)	13 (17.3)	3 (4.0)	17 (22.7)	25 (33.3)
D-III (revitalization, decentralization, but no collaboration)	74 (100.0)	60 (81.1)	52 (70.3)	16 (21.6)	7 (9.5)	4 (5.4)	21 (28.4)	34 (45.9)
D-IV (revitalization, decentralization, and collaboration)	80 (100.00)	54 (67.5)	61 (76.3)	11 (13.8)	21 (26.3)	0 (.0)	3 (3.8)	37 (46.3)
Total	299 (100.0)	193 (64.5)	211 (70.6)	50 (16.7)	49 (16.4)	7 (2.3)	56 (18.7)	113 (37.8)

Note: Figures in parenthesis indicate percentages

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Table 3. Perceived impact of decentralization and co-management on protected area

Level of decentralization and co-management	Total household sample	Perceived impact of <i>nagari</i> revitalization on protected area management			<i>Nagari</i> activities in managing protected area	
		No impact	Do not know	Positive impact	Regulating forest use	Guarding Forest
D-I (no revitalization of village institution)	70 (100.0)	69 (98.6)	1 (1.4)	0 (0)	0 (0)	0 (0)
D-II (revitalization without decentralization)	75 (100.0)	39 (52.0)	25 (33.3)	11 (14.7)	4 (5.3)	3 (4.0)
D-III (revitalization, decentralization, without collaboration)	74 (100.0)	52 (70.3)	17 (23.0)	5 (6.8)	0 (0)	0 (0)
D-IV (revitalization, decentralization and collaboration)	80 (100.0)	26 (32.5)	16 (20.0)	38 (47.5)	38 (47.5)	19 (23.8)
Total	299 (100.0)	186 (62.2)	59 (19.7)	54 (18.1)	42 (14.0)	22 (7.4)

Note: Figures in parenthesis indicate percentages

Table 4: Perceived existence of protected area, authority over protected areas

Level of decentralization and co-management	Total household sample	Perceived existence of protected area			Perceived authority over protected areas		
		No	Exist	Do not know	Government	<i>Nagari</i>	Other
D-I (no revitalization)	70 (100.0)	20 (28.6)	42 (60.0)	8 (11.4)	25.00 (35.71)	1 (1.43)	44.00 (62.86)
D-II (revitalization but no decentralization)	75 (100.0)	8 (10.7)	55 (73.3)	12 (16.0)	38.00 (50.67)	3 (4.00)	34.00 (45.33)
D-III (revitalization, decentralization, but no collaboration)	74 (100.0)	8 (10.8)	58 (78.4)	8 (10.8)	30.00 (40.54)	4 (5.41)	40.00 (54.05)
D-IV (revitalization, decentralization, and collaboration)	80 (100.0)	14 (17.5)	57 (71.3)	9 (11.3)	16.00 (20.00)	21 (26.25)	43.00 (53.75)
Total	299 (100.0)	50 (16.7)	212 (70.9)	37 (12.4)	109 (36.40)	29 (9.70)	161 (53.90)

Note: Figures in parenthesis indicate percentages

Conditions for co-management

As this paper argues, co-management can only happen when there is a multilevel decentralization; from central to district and down to village level government. Secondly, co-management happens only if there is a local institution to cooperate with. Thirdly, there must be a clear incentive for the parties to participate. Our cases show that D-IV district performs co-management while the rest do not. We

explore three conditions for co-management below.

(a) Re-decentralization

Our cases show that there are significant differences in re-decentralization across districts D-I to D-IV. D-I represents no re-decentralization from district to local level institution while D-IV represents re-decentralization and is performing co-management. As mentioned earlier, current decentralization policy in Indonesia opens room for creativity in the provision of administration and public services. However, there are differences between districts in their initiatives under the decentralization framework. In many places, however, decentralization ends at district level government.

(b) Local Institutions

Co-management is only feasible with active involvement of local institutions. In many parts of the world during the last four decades, there have been attempts to replace various local institutions with centrally designed homogenous administrative models. These attempts have further weakened local institutions. Since co-management is not possible through weak local institutions, there is a need to revitalize and empower the local institutions.

Revitalization of traditional local institutions like *nagari* in West Sumatra is an appropriate way to re-decentralize. As mentioned earlier, the *nagari* is a local, traditional socio-cultural and political unit that has a strong local basis as compared to the *desa* administrative system introduced during the New Order by central government.

(c) Local incentives

The provision of incentives at the local level is a real challenge for local government seeking to get local communities involved in protected area management. If this could be attained, dependence on external resources to finance protected areas management could be reduced. In order to attain this, the valuation of benefits from protected areas has to be expanded beyond biodiversity conservation to ecological and environmental services (see for example Sunderlin

et al 2005; Smith and Scheer 2003). Sunderlin et al. (2005) have identified four types of direct payments for forest dominant environmental services, namely, carbon, hydrological protection, biodiversity conservation, and recreational values. By securing payment in return for these services, the finance problem of protected areas could be solved. A watershed protection fee, for example, is a potential source of finance for protected areas (see Spergel 2002).

These last two developments suggest a different approach for protected areas management and to the role each stakeholder could play. On the management level, Sayer (2000) suggests that a conservation agency could adopt out-put-based systems ensuring effective collaboration among all stakeholders. Hence, the opposing objectives of local people, including local government, and the establishment of a protected area could lead to a movement for reconciliation. However, for many local governments in developing countries, it is hard to imagine environmental services that generate local revenue. Their basic questions will go like this: who is going to pay for a carbon sink, how are we to increase the low revenue derived from recreational value, and what sort of value is to be given to biodiversity conservation? The only clear ecological benefits would probably be hydrological protection, but again who is going to pay for this service?

With current decentralization and the financial balance between central and district government in Indonesia, a portion of natural resources tax is returned to provincial and district government. This is a significant change in the sharing mechanism of collected tax under the decentralization law. Earlier, Indonesia was known for the most centralized taxation system in the world (Simanjuntak 2001).

Surface water for hydropower plant is taxable natural resource. The National Power Corporation (PLN) as the operator of Singkarak Hydro Electric Power Plant pays an amount of IDR 1.8 billion (USD 180,000) per year as surface water tax (*Mimbar Minang* 14 Jan. 2003). According to Law No. 34/ 2000 on tax and regional redistribution, 70% of water tax should be returned to district governments. District governments, in turn, should allocate 10% of the amount to village level government. Surface water tax received by district government from Singkarak HEPP creates an incentives mechanism to get communities involved in protected areas management. Using this money district government also persuades *nagari* government to protect forest, by such measures as issuing *nagari* regulations on forest protection and financing the operation of a *nagari* forest guard task force. Solok District (D-IV) government has enjoyed this tax return since the implementation of government decentralization in 2001.

Direct surface water tax or a watershed protection fee at a global level is not exclusive to Solok, however. In Columbia, Spergel (2002) reports, the 1993 Environmental Law required hydroelectric plants to transfer three percent of their revenues to regional governments (and an additional three percent to municipal governments) to carry out watershed conservation projects and urban sanitation projects. In Quito, Ecuador, water consumers pay a small surcharge on their monthly water bills to finance the cost of maintaining the forest cover of the watershed that supplies the city with drinking water. In Laos, Spergel reports, the developers of the proposed \$1.3 billion Nam Theun hydroelectric dam have agreed to pay \$1 billion per year for 30 years into a 'watershed conservation fund' to protect the pristine forests and endangered wildlife on the steep mountain slopes above the dam. Conserving the forests is also way of preventing the dam from silting up, thereby extending the dam's economic life by more than 50 percent (Spergel 2002: 369).

Proposed co-management model for protected areas

A review of several cases around the world and our field study show that it is not easy for local government to take an active role in protected areas management. The basic reason is that local administration and communities do not see any direct benefit in term of local revenue from protecting conservation forest. In addition, central government has been reluctant to involve local communities in protected areas management especially of conservation forest. *De jure* all conservation forest is under the authority of central government, and protection forest management has been devolved to local government. But, if a clear incentive is available, local government is willing to share responsibility. This has implications for the co-management model. A review of our findings show that the following definition of co-management by Borrini-Feyerabend et al. is equally applicable in Indonesia:

a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources (Borrini-Feyerabend et al. 2000: 1).

This definition implies a need to modify current protected areas management practices under government decentralization in Indonesia and other developing

countries.

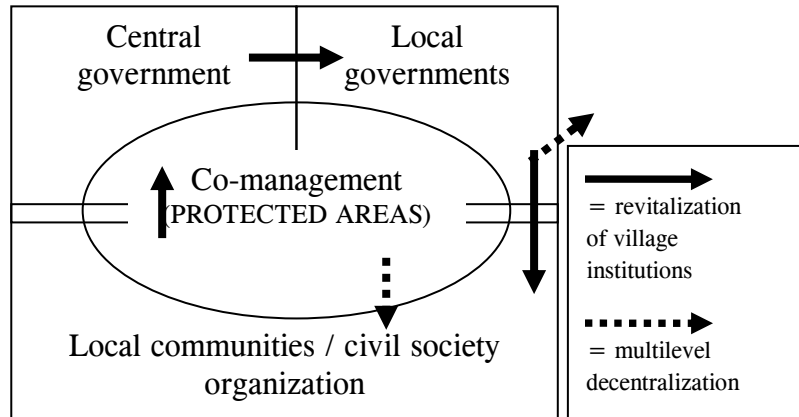
Our proposed framework for co-management takes several factors into consideration including the adoption of a decentralization policy in administration and at the financial level. Furthermore due importance must be given to local people's participation in protected areas management by revitalizing local institutions in forest management.

The three main pillars for protected area co-management in Indonesia are regional autonomy, forestry management, and financial autonomy. A regional autonomy law gives local autonomy in the adoption of locally appropriate administration, without the need to follow a homogeneous standardized national model, as it was under the centralized model of village administration. In Indonesia where multicultural identities exist, adopting a single model of village government has proven inappropriate. Hence current decentralization by local government could adopt a more appropriate structure according to local culture and tradition. In West Sumatra province, local government has adopted the 'return to *nagari*' concept, which means revitalizing local village level governance. The current Forestry Law, law No 41/1999 acknowledges the importance of local government and local community getting involved in protected areas management. Central government has devolved power to district level government to manage protection forest. Financial incentives and burden sharing mechanisms provide for local government to receive intergovernmental transfers of funds to provide basic services at district level and to equip regional autonomy with a right to use money from external sources through debt or grant.

Based on these considerations we propose a co-management model for protected areas by devolving power to village level government such as *nagari* in West Sumatra, and similar local institutions in other parts of the country. Our proposed model is modified from the World Bank co-management model by adding re-decentralization and revitalization of local institutions as preconditions for co-management. In addition, we also include local incentive structures in the framework. Our over all framework is presented in Figure 2.

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Figure 2: Proposed co-management model for protected areas in Indonesia (adopted from the World Bank 1999)



Finally, in order not to treat the adoption of a co-management model as yet another panacea, outsiders who extract resources from protected areas should be subjected to the jurisdiction of the local people. These local stakeholders should be able to take action against such outsiders. In this situation, co-management can be effective against external intruders. But it can also be captured by local elites for their individual benefit. Hence empowerment of the local community through the provision of opportunities to sue both external intruders and local elites should be pursued so that neither of these groups under the cover of local representation and participation becomes yet another source of exploitation.

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